the inner, *c c c*, represent the section of the netted cylinder; *b*, origin of a rootlet.

Fig. 6. Cross section of the rhizome of *Lastrea Oreopteris*, somewhat foreshortened, with a portion of a petiole attached, showing the converging tracts of dark tissue, *a*.

Fig. 7. Section of the rhizome of *Lastrea dilatata* along the axis, showing the fusiform dark nodules in the medullary tissue: *a a*, fasciculi of the netted cylinder in section.

Fig. 8. Cross section of a petiole of *Asplenium Ruta muraria* near the base.

PLATE VI.

Fig. 1. Section of the petiole of *Scolopendrium vulgare*, along the axis, showing the course of the dark tracts, like two converging lines of railway.

Fig. 2. Cross section of the same, a little above the base.

Fig. 3. Cross section of the same, about the commencement of the lamina of the frond. In the small fronds of *Ceterach officinarum* the arrangement is somewhat similar.

Fig. 4. Cross section of the petiole of *Athyrium Filix fœmina* at the base.

Fig. 5. Cross section of the rhizome of *Hymenophyllum Wilsoni*, showing the brown cortical and pale medullary tissue, with the single vascular fasciculus imbedded in the latter.

Fig. 6. Cross section of the rhizome of *Allosorus crispus*, showing the central dark cord, and the sheaths round the fasciculi of the netted cylinder.

Fig. 7. Cross section of the rhizome of *Pteris aquilina*, showing the outer and inner series of vascular fasciculi, the two intermediate dark bands, and the extremities of some of the longitudinal dark filaments.

Fig. 8. A corresponding section of the base of the petiole.

Fig. 9. Cross section of the petiole of *Polypodium alpestre* above the point of junction of the two lateral fasciculi. The section below this point is nearly as in fig. 4. These two figures would also represent in some degree the arrangement in *Lastrea Thelypteris*, if the fasciculi were surrounded by a coat of dark tissue.

Fig. 10. Cross section of the petiole of *Lastrea cristata* near the base.

There is a similar arrangement in *Polystichum aculeatum*, *Lastrea Filix mas*, and *L. dilatata*, and also, with the exception of the dark sheaths, in *Polystichum Lonchitis*.

The magnifying power is marked beside each figure.

XLII.—*On some new Genera and Species of Mollusca from Japan.* By ARTHUR ADAMS, F.L.S., &c.

Genus ZAFRA, A. Adams.

Testa acuminato-ovalis utrinque angustata, in medio tumida; anfractibus longitudinaliter plicatis, ultimo ad basin constricto. Apertura linearis, angusta; labio effuso, margine externo libero; labro margine acuto, postice subsinuato, in medio recto, subinflexo.

This little shell will constitute the nucleus of a group of *Turridæ*, of which several from deep water have been described by D'Orbigny, and figured, I believe, in the last plate of Reeve's

Monograph of *Pleurotoma*. They are small, mitriform, plicate species, with a narrow-linear aperture, and with the last whorl contracted at the fore part.

Zafra mitriformis, A. Adams.

Z. testa mitriformi, in medio incrassata, alba, fascia fusca obscura ad suturas ornata, anfractu ultimo ad basin rufo tincto, et linea angusta rufa transversa ad peripheriam circumcincto; anfractibus $6\frac{1}{2}$, planiusculis, longitudinaliter plicatis; plicis validis, obliquis, subdistantibus; anfractu ultimo antice constricto et oblique sulcato.

Hab. Mino-Sima; 63 fathoms.

Genus Rissoella, Gray.

The little shells I propose to describe as species of this genus agree with it as at present constituted, and all have the appearance of being adult. They may, however, as may those also from the British Seas, be the young of other genera. But until we are in a position to demonstrate their real nature, or until, by an examination of the animal, they are proved to be only a transition state in the metamorphoses of some higher Mollusca, it is desirable to record their existence in every sea investigated. Numerous small shells, evidently nuclear whorls of known genera, have been rejected from my list, some being immature *Macrocheili* and *Odostomiæ*, and others the embryonic state of larger Gasteropods.

1. *Rissoella omphalotropis*, A. Adams.

R. testa conoidali, alba, opaca, profunde umbilicata; umbilico carinula circumcincto; anfractibus $3\frac{1}{2}$, convexiusculis, suturis profundis, anfractu ultimo ad peripheriam vix angulato, transversim obsolete exarato; apertura subcirculari, antice vix producta; labio rectiusculo, subincrassato.

Hab. Sado; 30 fathoms.

2. *Rissoella vitrina*, A. Adams.

R. testa conoidali, anguste umbilicata, solidiuscula, vitrea, pellucida; anfractibus $3\frac{1}{2}$, lævibus, convexiusculis, ultimo rotundato, ventricoso, suturis marginatis; umbilico angusto, simplici; apertura orbiculari.

Hab. Tabu-Sima; 25 fathoms.

3. *Rissoella vesicalis*, A. Adams.

R. testa globoso-conoidea, rimate umbilicata, alba, semiopaca; anfractibus $3\frac{1}{2}$, convexis, lævibus, suturis profundis, simplicibus, anfractu ultimo rotundato, ventricoso; apertura circulari; labio brevi, rectiusculo, superne subdilatato.

Hab. Sado; 30 fathoms.

4. *Rissoella minima*, A. Adams.

R. testa perparva, umbilicata, lævi, nitida, subopaca; anfractibus $3\frac{1}{2}$, convexis, suturis profundis, anfractu ultimo ventricoso, ad peripheriam rotundato; umbilico angusto, rimato; apertura circulari.

Hab. Tsu-Sima; 26 fathoms.

5. *Rissoella turgidula*, A. Adams.

R. testa brevi, conoidea, anguste et profunde umbilicata, semiopaca, nitida, alba; anfractibus $3\frac{1}{2}$, convexis, simplicibus, suturis profundis, anfractu ultimo turgido, ad peripheriam rotundato; apertura ovata; labio tenui, acuto.

Hab. Korea Strait; 46 fathoms.

6. *Rissoella mundula*, A. Adams.

R. testa vix rimata, conoidali, tenui, alba, opaca; anfractibus convexis, simplicibus, suturis profundis, anfractu ultimo amplo; apertura ovata; labio tenui, antice subproducto.

Hab. Tsu-Sima; 26 fathoms.

7. *Rissoella hydrophana*, A. Adams.

R. testa conoidali, profunde umbilicata, alba, tenui, semipellucida; anfractibus $3\frac{1}{2}$, convexis, lævibus, ultimo rotundato, ventricoso; suturis marginatis; umbilico patulo, striis radiantibus ornato.

Hab. Tabu-Sima; 25 fathoms.

8. *Rissoella spiralis*, A. Adams.

R. testa helicoidea, profunde et late umbilicata, tenui, pellucida; anfractibus $3\frac{1}{2}$, lævibus, rotundis, suturis profundis, anfractu ultimo ad peritrema vix soluto; apertura semicirculari; labio rectiusculo.

Hab. Sado; 30 fathoms.

Genus Syrnola, A. Adams.

I discovered the type of this pretty little genus (*S. gracillima*) in 1859, in the Sea of Japan; and since then I have obtained some additional species from deep-water dredgings in the same sea. They are all of small size, and seem to fall very naturally into this group; they are all banded, and of a vitreous texture, by which, and their subulate or aciculate form, they are readily distinguished from *Odostomia*, the species of which are white and destitute of coloured markings. *Syrnolæ*, in fact, are small slender *Obelisci* with a single columellar plait.

1. *Syrnola cinctella*, A. Adams.

S. testa gracili, subulata, lævi, nitida, semipellucida; anfractibus $9\frac{1}{2}$, planis, linea angusta transversa rufo-fusca ad suturas ornatis; suturis exaratis; anfractu ultimo ad peripheriam subangulato, in

medio linea rufo-fusca circumcincto ; apertura subquadrata ; plica parietali conspicua transversa ; labro simplici, acuto.

Hab. Korea Strait ; 46 fathoms.

2. *Syrnola pupina,* A. Adams.

S. testa subulata, in medio tumida, subopaca, nitida, longitudinaliter substriata ; anfractibus $8\frac{1}{2}$, planiusculis, fascia lata pallide fusca transversa in medio ornatis ; anfractu ultimo elongato, ad basin rotundato ; apertura oblonga, plica parietali obliqua ; labro margine subrecto.

Hab. Mino-Sima ; 63 fathoms.

3. *Syrnola lepidula,* A. Adams.

S. testa ovato-subulata, tenui, carneola, semipellucida, lævi, nitida, longitudinaliter substriata ; anfractibus 7, convexiusculis, fascia angusta rufo-fusca transversa ad suturas ornatis ; anfractu ultimo elongato, ad basin rotundato ; apertura oblonga ; plica parietali obliqua, tenuicula ; labro simplici, acuto.

Hab. Tsu-Sima ; 16 fathoms.

4. *Syrnola teretiuscula,* A. Adams.

S. testa subulato-aciculata, sordide alba, lævi, nitida ; anfractibus $10\frac{1}{2}$, planiusculis, suturis exaratis ; anfractu ultimo elongato, ad basin dilatato, rotundato ; apertura subquadrata ; plica parietali conspicua, transversa ; labro simplici, acuto.

Hab. Tsu-Sima ; 16 fathoms.

5. *Syrnola mera,* A. Adams.

S. testa aciculato-subulata, gracili, sordide alba ; anfractibus 8, planiusculis, suturis impressis, anfractu ultimo ad basin subangulato ; regione umbilicali callo circumcincta, excavata ; apertura subquadrata ; plica parietali transversa ; labro simplici, acuto.

Hab. Mino-Sima ; 63 fathoms.

6. *Syrnola bizonalis,* A. Adams.

S. testa subulata, tenui, alba, opaca ; anfractibus $9\frac{1}{2}$, planulatis, in medio zonula transversa pallide rufescente ornatis ; anfractu ultimo elongato, zonulis duabus rufescentibus succincto ; apertura oblonga ; plica parietali tenuicula, obliqua, mediana ; labro simplici, acuto.

Hab. Korea Strait ; 46 fathoms.

7. *Syrnola pyramidalis,* A. Adams.

S. testa brevi, acuminato-conoidea, albida ; anfractibus 7, planis, longitudinaliter striatis, ultimo amplo, ad basin rotundato ; apertura subquadrata ; plica parietali parva, transversa ; labro simplici, acuto.

Hab. Tsu-Sima ; 16 fathoms.

8. *Syrnola vitrea,* A. Adams.

S. testa acuminato-conoidea, alba, semipellucida, vitrea, nitida; anfractibus 5, planulatis, linea angusta transversa rufescente in medio ornatis, suturis exaratis; apertura ovata; plica parietali valida, mediana, transversa; labro intus transversim sulcato.

Hab. Mino-Sima; 63 fathoms.

9. *Syrnola nitidula,* A. Adams.

S. testa subulatim conoidali, vitrea, nitida, semipellucida, suturis profundis; anfractibus $7\frac{1}{2}$, planulatis, lævibus, in medio fascia rufa angusta transversa ornatis; apertura subquadrata, antice subacuminata; plica parietali valida, mediana; labro intus sulcato.

Hab. Mino-Sima; 63 fathoms.

Genus Styliferina, A. Adams.

Testa imperforata, ovato-conica, tenuis, lævis; anfractibus multis, supremis in stylum productis, nucleo sinistrali. Apertura subquadrata, antice integra; labio simplici, recto.

The genus *Entoconcha* of J. Müller, which is parasitic on *Synapta,* also has "the columellar margin straight;" but the form is described as being very different from *Styliferina,* there being almost no spire, and the aperture being transverse and semilunar. I have never seen a specimen of *Entoconcha,* which is also said to be operculate. My shells were, unfortunately, in the case of both the species, dredged dead, though perfect. I examined dozens of the blue *Asterinæ* that came up with them, but found no parasite, nor was I more fortunate with *Spatangi* or *Clypeasteres.*

1. *Styliferina orthochila,* A. Adams.

S. testa imperforata, ovato-conica, pallide fusca, tenui, semiopaca; anfractibus normalibus 6, convexiusculis, lævibus, ultimo inflato; apertura subquadrata; labio recto, antice in labrum continuo; labro arcuato.

Hab. Tsu-Sima; 26 fathoms.

This species was dredged from a bottom abounding in red and blue *Asterinæ,* on which it may be parasitic.

2. *Styliferina goniochila,* A. Adams.

S. testa ovato-conica, imperforata, pellucida, vitrea, albida, tenui; anfractibus normalibus 5, convexiusculis, lævibus, ultimo inflato; apertura subquadrata; labio recto, antice in angulum productum desinente; labro arcuato.

Hab. Mino-Sima; 63 fathoms.

This species was dredged from a bottom containing large

quantities of fragments of dead *Ophiuri*, on which it may possibly be parasitic.

Genus Niphonia, A. Adams.

Testa depresso-globosa, tenuis, imperforata; anfractibus rapide accrescentibus. Apertura ampla, circularis; peritremate duplicato, externo tenui, acuto, in anfractum ultimum ascendente, interno incrassato, in labrum intus continuo.

This little genus most nearly resembles *Stomatella*; but the shell is very thin, and the aperture has an internal ledge, as if for the operculum. Two specimens only were obtained, both dead, and both wanting the opercula.

Niphonia pulchella, A. Adams.

N. testa lævi, pallide fusca, nitida, spiraliter lirata; anfractibus $2\frac{1}{2}$, convexis, ultimo liris transversis majoribus quinque et multis minoribus basalibus instructo; regione umbilicali impressa; peritremate margine acuto.

Hab. Off Mino-Sima. Korea Strait; 63 fathoms.

Genus Finella, A. Adams.

Testa tenuis, pupoidea, imperforata, in medio tumida; anfractibus transversim liratis, longitudinaliter plicatis, ultimo simplici. Apertura ovali, peritremate interrupto; labro simplici, acuto, non reflexo aut incrassato.

This genus, which is founded upon a small shell allied to *Rissoa*, will form a member of the family *Rissoidæ*.

Finella pupoides, A. Adams.

F. testa tenui, pupoidea, imperforata, pallide fusca, fascia transversa rufo-fusca in medio anfractuum, in anfractu ultimo fasciis duabus; anfractibus $7\frac{1}{2}$, convexis, transversim liratis, anfractibus supremis longitudinaliter plicatis, in medio subangulatis, ultimo simplici; apertura ovali; labro margine acuto, recto.

Hab. Tsu-Sima; 26 fathoms. Korea Strait; 46 fathoms.

Genus Minolia, A. Adams.

Testa globoso-conoidea, late et profunde umbilicata; anfractibus rotundatis, clathratis, suturis canaliculatis; anfractu ultimo ad aperturam subsoluto; umbilico perspectivo. Apertura circularis, intus margaritacea; peritremate continuo; margine recto, tenui, acuto.

Minolia is very like *Torinia* in form and sculpture; but the aperture is pearly within. It also resembles in form some southern species of *Margarita*; but the texture, markings, and sculpture of the shell are different. In sculpture also it resem-

bles the species of *Euchelus*, and especially the subgenus *Perrinia*, which I also dredged from deep water in the same locality. I have named the genus from Mino-Sima, the little island near Niphon, in the vicinity of which favourable circumstances enabled me to glean, by deep-water dredging, much fragmentary knowledge of the malacology of the Japanese archipelago.

Minolia punctata, A. Adams.

M. testa helicoidea, macromphala, fulva, rufo-punctata; anfractibus $6\frac{1}{2}$, convexis, cingulis transversis granulosis, majoribus cum minoribus alternantibus, rufo-punctatis ornatis, interstitiis lamellis tenuibus obliquis pulcherrime clathratis; suturis canaliculatis; umbilico perspectivo, cingulis granulosis concentricis instructo, interstitiis concinne clathratis.

This is another modification of the hollow spiral cone of the Trochoid family; the whorls are somewhat loosely rolled on themselves, which causes the sutures to be very deep, and the last whorl at the peritreme to be almost disunited from the penultimate whorl. The red-brown spots on the beaded ribs, and the exquisite clathrate sculpture of the surface, render this one of the prettiest shells in the great family of Trochoid Scutibranchs. In texture it resembles *Enida Japonica* and *Turcica monilifera*, and, judging from the shell, it appears to be more closely associated with the *Zizyphinus* group than with *Gibbula* or *Margarita*.

Wei-hae-Wei, Shan-Tung, China,
April 15, 1860.

XLIII.—*On the Nomenclature of the* Foraminifera.

By W. K. Parker, M. Micr. Soc., and T. R. Jones, F.G.S.

[Continued from p. 40.]

Part V. *The Foraminifera enumerated by* Denys de Montfort.

Denys de Montfort, being desirous to do justice as far as possible to the elucidation of the "Microscopic Shells" in his systematic and illustrated work on Conchology*, introduced the figures and descriptions of several *Foraminifera* into his book, stating that he was far from pretending to have given all their genera, but that he aimed at making some at least of their singular forms better known to naturalists (Discours préliminaire, p. xxviii). To this end he figured some specimens apparently

* 'Conchyliologie Systématique, et Classification Méthodique des Coquilles; offrant leurs figures, leur arrangement générique, leurs descriptions caractéristiques, leurs noms; ainsi que leur synonymie en plusieurs langues,' 2 vols. 8vo, Paris, 1808–1810.